GRADUS

LED Lighting Systems

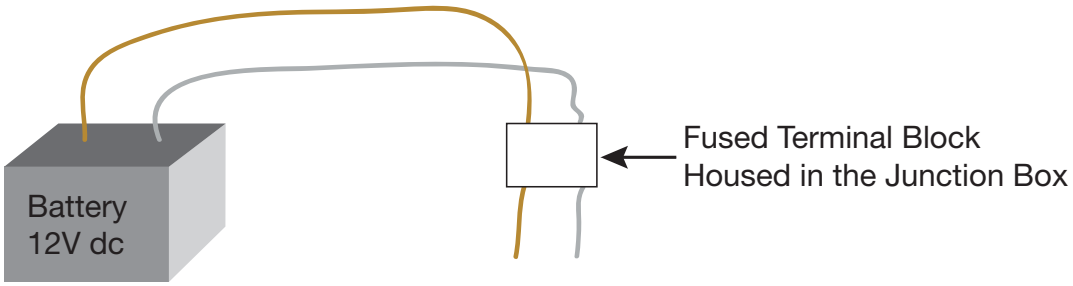
Testing & Basic Fault Finding

Data Sheet: (sheet 1 of 3) 25/11/2013

Testing

It is recommended that individual parts of the circuit are tested before they are connected to the corresponding Junction box.

This can be done by using a 12V DC battery pack.



If the light system does not illuminate first Check Polarity of the connection then refer to the basic fault finding section.

Once all the light system has been checked connect the wiring up to the terminal block (with fuse removed).

Switch on the power supply check that 12V dc is present across the input to the terminal block

Insert Fuse Check 12V dc is present, if it is present but circuit not illuminated check the polarity of the wiring.

If the circuit is still not illuminated, refer to the basic Fault finding section

If illuminated the system is functioning.

All Electrical Installation, connections and Testing must be carried out by Qualified Personnel.

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Basic Fault Finding

The system has been designed so that the floor loom is generally made up of two separately fused circuits and each set of stairs is separately fused.

This has the double advantage of aiding fault finding and preventing a single fault from causing the entire auditorium step and aisle lighting to fail.

These fuses are located in the junction boxes normally located at the top of each stairway and just inside either side of the entrance doors. The fuses should never be greater than 5A quick blow, UL approved fuses.

Each Power supply unit (PSU) is also fused. The PSU's are fed from a distribution Panel via breaker or via a mains supply socket. The Distribution Panel is normally sited in the projection suite.

Fault	Most Likely Cause	Action to Take
All Lighting Out	Power Supply Unit	See section A
One Aisle Not Working	Feed point fuse blown due to short	See section B
One step not working	Connections or input failure	See section B 6-11
One section of a step not working	Circuit board, connection link or flexi corner failure	See section B 6-11

Any replacements made to Gradus products including fuses and circuit boards must be exact replacements unless advised otherwise by the Technical Department.

Section A

Power Supply Fault

(A competent electrician must carry out work on the mains side of the transformer.)

Ensure there is power to the power supply and a 12V – 15V DC output from the power supply.

1) Blown output fuse
    a. Wire from P.S.U. to feed point(s) short, replace cable and fuse.
    b. Short on step circuits caused both feed point fuse and P.S.U. output fuse to blow – see B.
2) Blown input fuse
    a. Transformer fault, replace entire P.S.U.

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Section B

The steps are generally wired in black and red cables, the red cable being the positive.
In the feed point at the top of the steps, (usually a one gang wall box fitted at or just above skirting level), there will a fuse.
The cables then run down the cable management system to the steps.

If all of the lighting on an aisle is out, then a fuse in the feed point may have gone due to a short or faulty component.

Isolate the fault using the following methods.

1) Identify the feed point for the circuit which is not working and check if the fuse has blown.
2) Insert a new fuse and observe the steps.
3) If the lighting only comes on for a few seconds, it should be possible to observe any steps that do not come on, or are much dimmer that the rest. If this is the case proceed to 6).

If the fuse blows immediately, then the following steps should be taken.

4) Locate crimped connectors for a step halfway down, and disconnect the bottom half of the lighting, both positive and negative cables.
5) Insert another fuse.
   If the top half of the steps comes on, repeat this procedure 3/4 of the way down the steps after reconnecting the halfway point. Repeat again until the fault is isolated.
   If the top half does not come on, repeat this procedure for the first quarter of the steps, and repeat again until the fault is isolated.

If the short has occurred in a wire, replace or repair the wire.

If the fault has been isolated to a step;

6) Remove the lighting from the step and examine the circuit board for any signs of damage.
7) Replace any damaged boards and ensure that the replacements are exactly the same as the boards removed.
8) Connect the supply to the boards again to ensure correct operation.

If the fault still exists;

9) Remove all boards from the input connector and supply power to the connector.
10) Add each component until the faulty component is added and the fuse blows.
    Replace faulty component.

Note
Where applicable before removing the lid of the PSU make sure that electrical power is isolated. Ensure correctly rated fuses are used for replacement.
Investigate cause of failure before replacing blown fuse.

Isolate the power supply before removing cover to the PSU, or carrying out any work between the Distribution Panel & the output of the power supply.

A qualified electrician must carry out all electrical work.